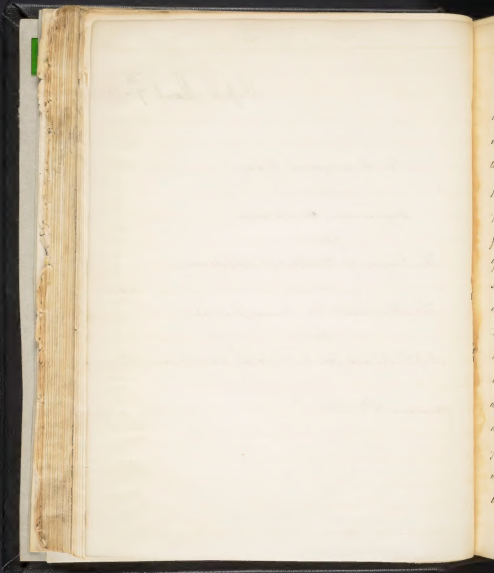


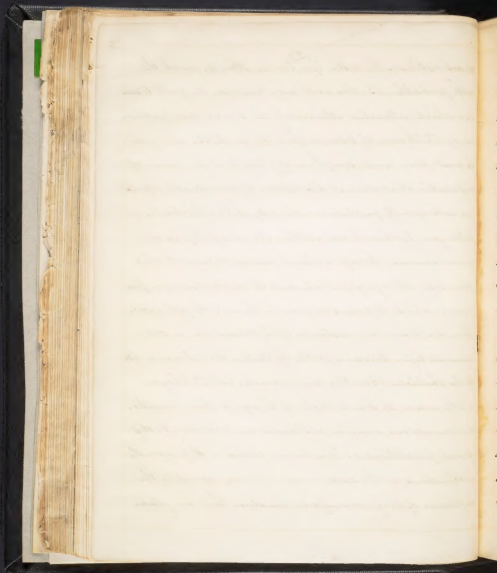
Papd March 7th 1828

An Inaugural Essay
on
Synanche Trachealis,
for
The Degree of Doctor of Medicine
in
The University of Pennsylvania,
by
A. J. Delapet Junr. of North Carolina.
January 16th 1828.



No disease to which the infant frame is subject, is more alarming in its progress, or more dangerous in its tendency than Diphtheria Trachealis. It requires the promptest and most unremitted attention of the practitioner on account of the evidently extreme sufferings of the patient and the danger of a speedy and fatal termination. It is known by the common names of Croup and Whoop. Croup is a Scotch term, and is supposed by Dr. Sympson to have been originally *coupe* which is derived from the French word *couper* signifying a cut-throat. Whoop is of American origin, and is thought by Dr. Hewack to be a corruption of *Whoever* from the heaving of the chest which takes place in the course of the disease. The history of Croup commences as late as the middle of the last Century. It is still a subject of dispute whether it existed antecedent to that period, or whether, owing to the almost entire neglect with which the disease of Children were treated it was unknown

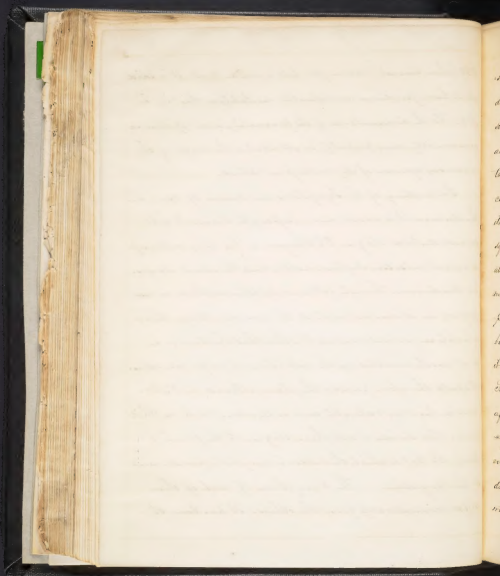
or not noticed. The latter opinion is, I think, much the most probable. Be this as it may however, the first transaction which attracted attention to the disease was published by Dr. Hume of Edinburgh in the year 1765, who gave its most prominent symptoms applied to it the name of 'suffocatio stridula'. A dissertation of considerable repute was subsequently published on the subject by Michaelis of Göttingen, by whom it was entitled 'Angina polyposa seu membranacea'. Group is almost entirely confined to children before the age of puberty and the most common period in which it occurs, is from the third to the fifth year. There are some rare instances of its occurrence in advanced life. It was asserted by Cullen that it never attacks children before they are weaned, but Dr. Whynne relates a case of it in a child of the age of three months, and numerous similar instances are recorded by different practitioners. This disease occurs most frequently in situations on the seashore, or in places exposed to the influence of large swamps or marshes. There are places



however, this exposure, in which it does not prevail. The town in which I reside, (Wilmington, North Carolina) is but six or seven miles from the sea and is completely surrounded by swamps and rice fields; and the dampness of the air which ~~exists~~ almost always exists to a greater or less extent, seems particularly calculated to produce the disease or to favour its prevalence. But it is of comparatively rare occurrence. Of the causes of Croup, by far the most common is exposure to a cold damp atmosphere and hence in some places it is even difficult to raise children. It is sometimes also produced by worms and other irritations in the alimentary canal. A full indigestible meal, taken just before going to bed is exceedingly apt to produce it. Dr. Boerhaave mentions a case which occurred in his own family, caused by a drop of wine getting accidentally into the trachea. Croup has been said by some to arise from contagion, but the opinion is entirely groundless. It sometimes prevails epidemically. This is said by Dr. Goldswell to have been the case in Virginia in the year

1799 when General Washington fell a victim to it. It is said also to have produced considerable mortality in this City in 1804. To the circumstance of its prevailing as an epidemic occasionally, may probably be attributed the origin of the common opinion of its contagious nature.

In treating of the symptoms and means of cure in this disease, it is usual and necessary to divide it into several distinct stages. Dr. Cheyne, in his essay on Croup divides it into the Inflammatory and Puerile stages, but this division though followed by other authors, is incomplete, as it does not include the forming stage. This is a highly important one, as it is then that the disease is most easily arrested by the exhibition of proper remedies. I shall therefore pursue the plan followed by Dr. Denon in his very valuable and interesting work on Children. He divides it into three stages - 1st the forming stage - 2^d that in which the disease is completely formed - and 3^d the Puerile. The symptoms of each of these differ considerably from the others. It has been ob-



ceived that in a majority of instances, the patient is
dull and heavy and is little disposed for amusement for
some days previous to the attack, and that the disease
advances with the ordinary symptoms of a common ca-
lark. It does occasionally however come on without any
obvious symptoms and the child frequently retains
its usual temperance until the moment of attack. The
symptom which usually first excites attention is a cough
attended by a jerking ringing sound, which is one of the
most certain characteristics of Croup. It has been com-
pared to a variety of sounds, as the ringing of a bell, the
cackling of a hen, and the tearing of an apron and probably
it does in many instances closely resemble each of them.
The striking is the sound however that the parent hears,
after having heard of once or twice cannot fail to re-
cognise it. In this stage it attracts only the cough, the
croup is not affected but: there is at first little or no
disturbance of the voice inasmuch the voice is pale and cold
without any sense of chilliness on the part of the pa-



tions; no marks of inflammation are presented by
 the gums, and the tongue in its appearance is natu-
 ral. The duration of the first stage is very va-
 rious; it may continue for several days and on the ap-
 plication of some exciting cause be followed by the
 second, or the latter may supervene in a much shorter
 time. An aggravation of the above symptoms and
 the addition of others mark the approach of the second
 stage, and the disease becomes fully formed. The cough
 is very much increased in violence and the paroxysms
 are longer and more violent. The wheezing which is
 first attended only the cough, is now distinctly per-
 ceived on any attempt of the patient to speak; the pulse is in-
 creased; the face is much flushed; there is great difficulty
 of respiration which is increased by every attack of cough,
 an insupportable uneasiness, with restlessness; and the
 patient frequently rises in bed in hopes of diminish-
 ing the dyspnoea. The disease now rapidly advances to
 the third or Congestion Stage. The paroxysms of



cough seems much more frequent and long continued,
 and is followed by extreme prostration, the difficulty
 of breathing is so much increased by the determina-
 tion of blood to the lungs; the swelling is so great as
 to render every position intolerable, the head is thrown
 back and the patient gasps for air, the face much more
 before flushed, or more pale and livid; the voice becomes
 hoarse and ringing and assumes a wheezing sound,
 the shoulders are elevated at each expiration and the
 heart thumps violently. The effects of this throbbing of
 the heart may sometimes be distinctly seen upon the
 sides of the thorax, and even the costal ribs are occasion-
 ally elevated. Death frequently takes place suddenly
 after an attack of cough, and sometimes insensibility
 ensues close the scene; but it generally happens
 that the sufferings of the patient continue until the
 last moment. "The countenance" says Dr. Keen at the
 conclusion of his description of the symptoms, "is
 anxious beyond expression, the eyes become more



increasingly brilliant and desecching - they eloquently im-
 plore a relief which neither affection nor science can
 afford; and the poor sufferer expires with a look full
 of supplication and anguish. When Cramp terminates
 fatally, death is almost invariably produced by a me-
 chanical obstruction of respiration. And this may be
 caused by the adcutaneous membrane uniting some
 times, viz. the trachea and oesophagus, also, and preventing
 the entrance of air into the lungs, or by an accumulation
 of mucus in the trachea and bronchia, or by a spas-
 modic action of the muscles of the larynx, or by the
 muscular spasm which enters into the composition of
 the trachea itself. When the disease terminates favourably
 the inflammation is followed by resolution; the spasmodic
 action ceases, and free respiration takes place.

The duration of an attack is various; it has been known
 to end fatally in twentyfour hours, and instances are re-
 corded of its continuing for weeks. But it usually runs
 its course in from three to five days.



In the early stage of scorbut, it may almost always be cured by the prompt administration of proper remedies; but after it is somewhat advanced the prognosis is by no means so certain. The most favourable sign is a demonstration of successful evacuating the circulation of medicines, the operation at the same time becoming less difficult. The less violent the symptoms be, the more favourable if the system obstinately resists the action of remedies, and the symptoms continue to increase in violence. The virus of the malarious and the virus of the heart are said to be invariably fatal scroves.

Post mortem examinations, prove the existence of inflammation in almost every case. The mucous membrane is not only affected but the muscular fibres of the larynx and trachea are implicated. The trachea and bronchia are generally loaded with mucus and lymph mixed frequently with a fluid resembling pus, and occasionally a tough substance in the form of a mass, crusting the inner surface of the tube. The formation



of the membrane has been denied by authors of the highest respectability, but having seen it myself on one instance, I am of course bound to believe in its existence. If death takes place in the Congestive Stage, the lungs are found heavily engorged with blood.

The first object in the Treatment of Croup when in its formid stage is to produce emesis, and the best article that can be used for this purpose is the Compound Syrup of Squills or Doan's Pile Syrup. By its combined emetic, cathartic, and diaphoretic properties, it cleanses the primæ viæ, and equalises the circulation. It is very highly recommended by the Professor of Materia Medica in this University; and from his experience in the management of this disease as well as from the united testimony of all who have used the remedy, there can be no doubt of its efficacy. In addition to this some stimulating liniment or a Sinapism should be applied to the throat; and the patient carefully defended from cold. In the early stage when only cough and the



colic has symptoms present this plan will rarely fail to give relief. But if from neglect of remedies, or from any other cause the distention becomes fully formed, or if the practitioner, as is very frequently the case, is not called until this takes place, the treatment must be more active. An important object aimed at in this stage also is to induce vomiting, but it is strikingly characteristic of this description at its height, that it resists the action of an emetic sometimes with the most unaccounting obstinacy. It is therefore necessary to give the remedies in large doses, and to use auxiliary means to promote their operation. The most prompt and active emetic is a combination of ipecac, with tartaric of antimony. The addition of a small quantity of calomel adds much to its efficacy. I have repeatedly seen mercu-
 -curial emetics of this kind prescribed by my father in several inflammatory affections of the throat and always with the most decided advantage. To promote its operation the warm bath should be used and the



reluctant kept in it for fifteen or twenty animals. This means much good to produce the desired effect and enables us to relieve the symptoms. But by far the most important remedy is Bloodletting and this should be employed so as to have a full and decided effect on the system, as we will recall you it.

"A little bleeding is a dangerous thing,
Blood free, or open not the vital springs."

It is truly surprising to what an extent this operation may be carried even in very young children. Dr. Keen relates the case of a child, of the age of three or four years from whom he abstracted twenty four ounces of blood on the source of our liver. The child, although almost in a critical state, after the operation, recovered perfectly. To make bleeding in aid of the lancet is a very valuable remedy, and for this purpose, leeches are far preferable to any other means we possess. If cups are used they should be applied to the sides, and not to the front of the neck. In the treatment we may again resort, if necessary to an emetic. The operation



tion is now almost certain, and then remedies will rarely fail to put a stop to the progress of the disease. The more violent symptoms being subdued a large dose of calomel may be given. By removing irritating matters from the bowels, it prevents the tendency of the disease to return. If any cough or uneasiness remains small doses of the Compound syrup of squills will be found very useful.

If, however, the disease is not cured, and the inflammation extends to the minute ramifications of the bronchia, producing the symptoms of the Congestion Stage, the practice is widely different. If venesection is required, at all it must be in small quantities, for so great is the determination to the lungs in this stage that a sudden abstraction of blood from the system will sometimes produce even fatal prostration. Topical bleeding by leeches or cups is a valuable substitute for the lancet in these cases. A large blister and other stimulating applications to the chest are indispensable. Some



lies and the warm bath will also be of great service.

This may be followed by expectorant doses of the compound syrup before alluded to. But after the disease has advanced to this stage, all our remedies are in many instances, enervating and the patient rapidly sinks. We must however, never abandon a patient, for owing to the nature of the disease and to the great precariousness of life in children, recoveries frequently take place under circumstances, apparently desperate. Much dispute has arisen concerning the propriety of the operation of bronchotomy in the last stage of Croup for the purpose of abstracting the membrane.

In cases where all hope of recovery is abandoned and when the symptoms indicate the presence of the membrane I think, there can be no reasonable objection to the operation. If the life of the patient is saved by it and the dying infant thus restored to the arms of its distressed parents, what a pleasing gratification will it afford the practitioner! and if it fails he will at least have the satisfaction of being conscious that he has discharged his duty.

